Otay Ranch Transit Planning Study

TASK 6
CAPITAL COST ESTIMATES

JANUARY 2008

TABLE OF CONTENTS

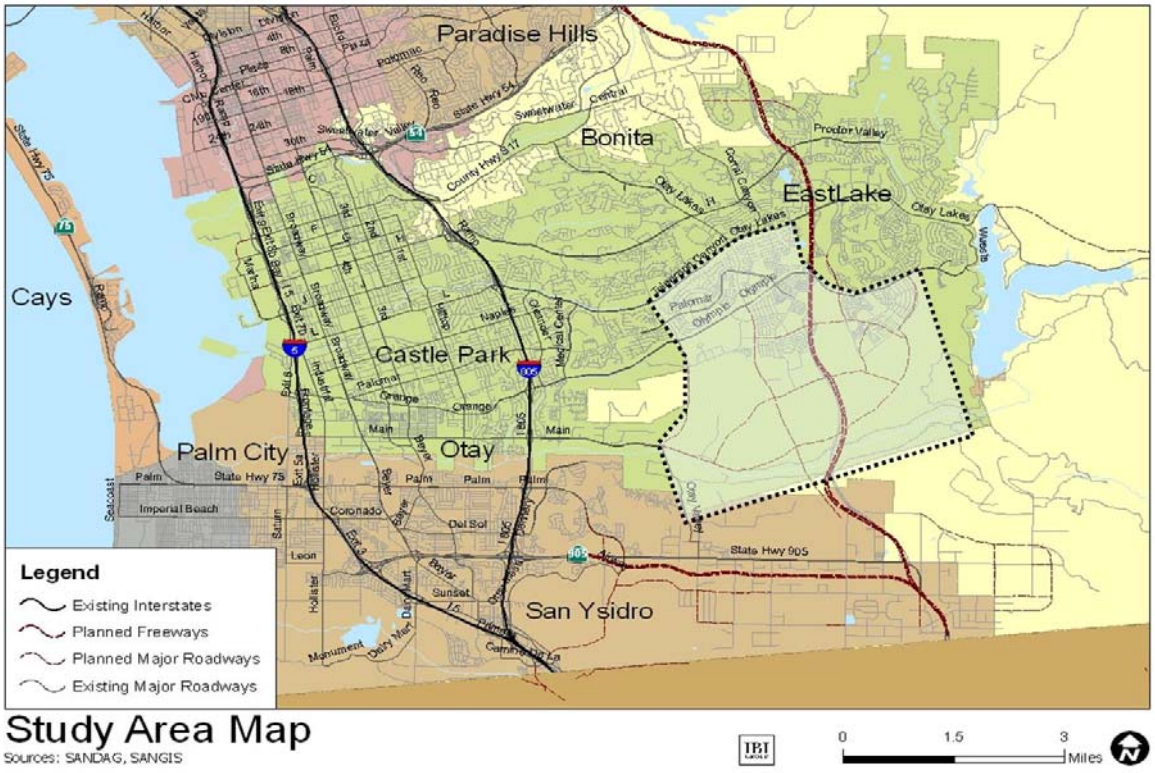
LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

This report documents the conceptual capital cost estimates developed for the transit improvements in the Chula Vista Transit Study. The purpose of the Chula Vista Transit Study is to develop transit service options for the Village 9, Eastern Urban Center (EUC), and University planning areas of the Otay Ranch community. While the primary focus of this study is Village 9, EUC, and University area, transit options were considered in the broader context of the Otay Ranch Community, Chula Vista, and the region. The overall study area is shown in Figure 1 below. Figure 2 shows the existing and planned roadway network, existing transit service, and activity centers in the study area.

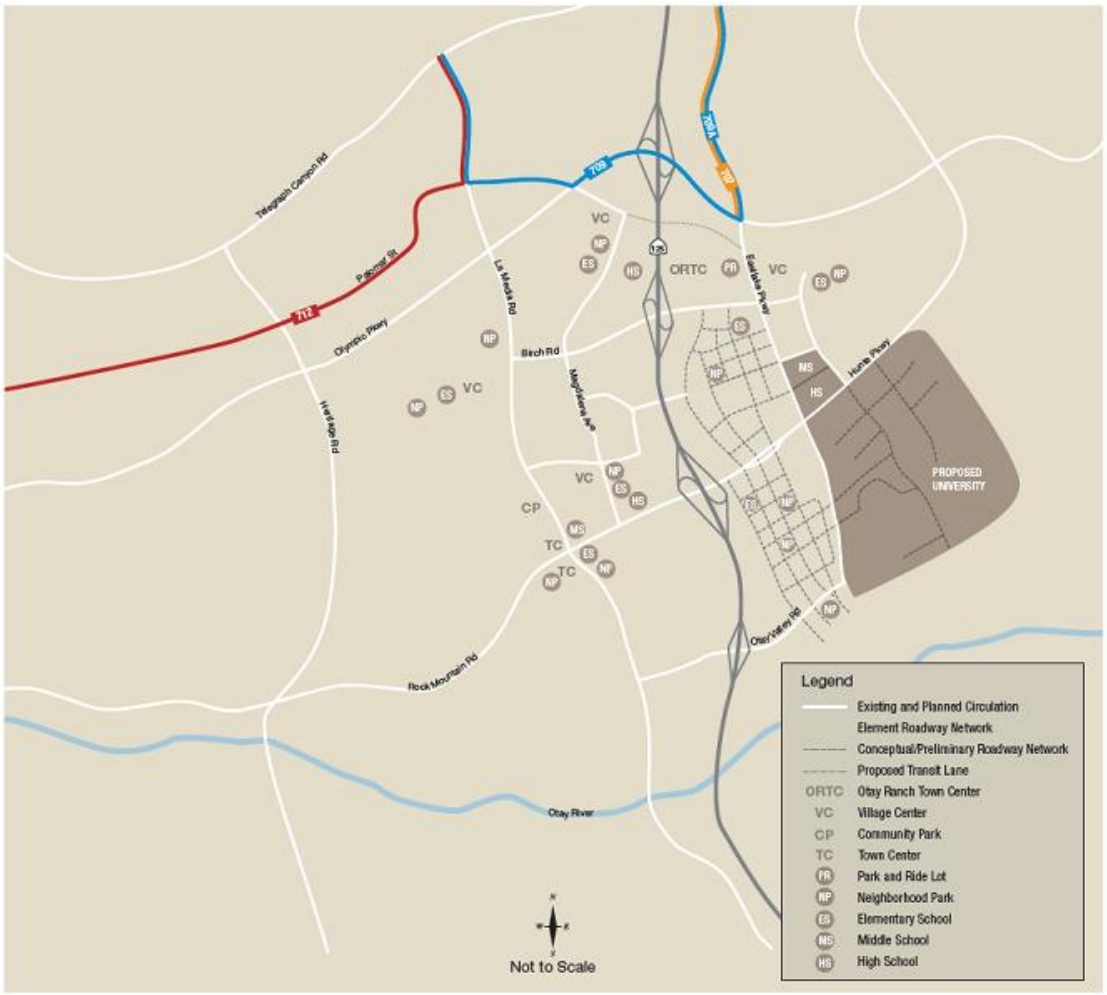
Figure 1 - Study Area Map



In addition to the Introduction, this report includes the following sections.

2. Summary of Service and Capital Improvement Proposals
3. Costs Estimates, including a description the estimation methodology, the cost estimates, and the use of the cost estimates

Figure 2 - Study Area Roadway Network and Activity Centers



2. SERVICE AND CAPITAL IMPROVEMENTS

This section summarizes the study's recommended service improvements and their capital requirements.

2.1 Service Improvements

Several transit service improvements are being planned for the study area. The furthest along in the development process is the South Bay BRT Line (see Figure 3). This line will run through the Otay Ranch area providing a high speed regional transit connection to downtown San Diego and the Otay Mesa border crossing. The BRT will access the EUC via Eastlake Parkway before continuing to SR-125 and the Otay Mesa border crossing. All the services proposed in this study focus on supporting and connecting to the South Bay BRT within the study area. (Cost estimates for the South Bay BRT project are not provided in this report since it is a separate project being developed by SANDAG.)

As documented in the Task 2 Technical Report, four new services are proposed for the study area: Circulator service, a new intersecting BRT service, and two Rapid/BRT services in the city's General Plan. Summaries of these services are provided below.

Circulator Service

The Circulator service will provide high frequency service connecting key local activity centers in the study area. As illustrated in Figure 4, the proposed Circulator alignment connects several key activity centers in the EUC, Village 9, and University Planning Areas. In addition to being located near key activity centers, stops are also located at South Bay BRT stations to provide connections to regional services.

Intersecting BRT Service

The intersecting BRT will provide a service that will support the South Bay BRT by providing regional connectivity to areas not currently planned to be served by the South Bay line (see Figure 5). Similar to the South Bay BRT line, intersecting BRT service would provide viable commute options and connect with key destinations throughout the San Diego region. BRT can also provide peak capacity to support special events and high demand events generated by the Coors Amphitheatre, university events, and/or potential future football stadium.

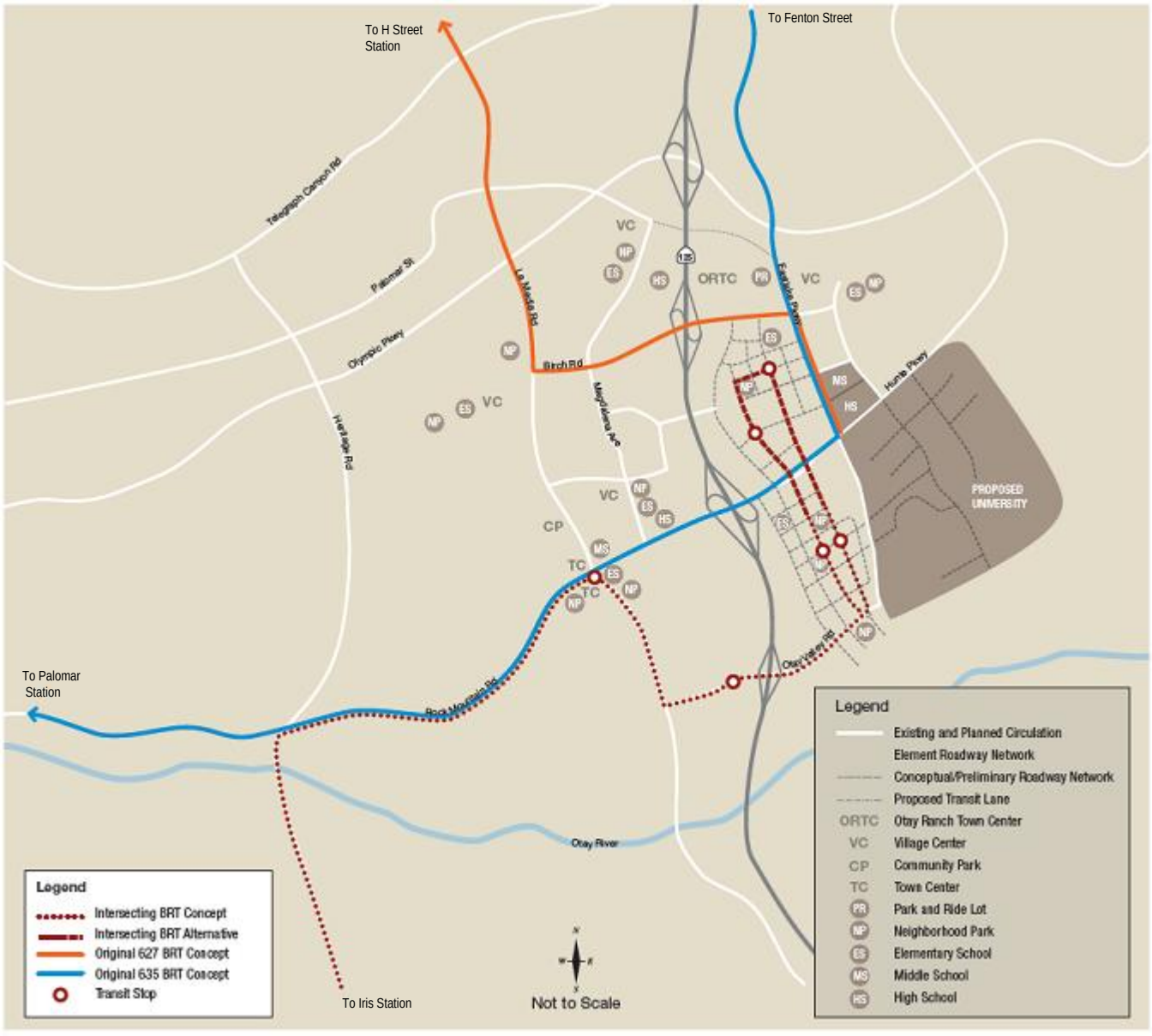
General Plan BRT/Rapid Services

The city's General Plan includes two BRT/Rapid services (see Figure 5). Route 627 would connect the H Street Trolley Station with Otay Ranch via H Street, Otay Lakes Road, La Media, and Birch Road. It would serve Downtown Chula Vista, Southwestern College, and Village 9. Route 635 would operate between the Palomar Street Station and Eastlake via Village 9. It would operate on Main Street, Rock Mountain Road, and Eastlake Parkway.

Figure 3 - South Bay BRT Study Area Alignment

Figure 4 - Circulator Concepts

Figure 5 - Supporting BRT Concepts



2.2 Capital Requirements

The new services will need infrastructure improvements such as stations/stops, queue jumps and traffic signal priority, and vehicles. The components assumed for these capital elements are described below.

INFRASTRUCTURE IMPROVEMENTS

Stations

Circulator service would operate with high frequency (15 minutes), resulting in short wait times and relatively low numbers of passengers boarding each bus. Most Circulator stops would have a modest level of amenities including the bus stop sign, a bench, some transit information, and a trash receptacle. Additional amenities could be provided at high ridership locations.

BRT stations would serve larger numbers of passengers and would have more amenities including benches, lighting, next bus and route information, ticket vending machines, and trash receptacles. Their size can vary depending on the expected number of passengers using the station. Three sizes were developed and cost estimates were developed for each one.

Priority Treatments

This capital element includes queue jump lanes, transit lanes, and transit signal priority. These features would be deployed at several locations for both the BRT services and the Circulator.

Queue Jump Lanes – These facilities consist of lane striping at intersections for both the approach and receiving side of the intersection. If the queue jump lane is shared with right turning vehicles, a special phase will be added to the traffic signal where appropriate to give the bus an early green.

Transit Lanes – Exclusive lanes for transit vehicles are proposed for the transit promenade on the university campus and along a portion of Eastlake Parkway near Birch Road.

Traffic Signal Priority – These systems provide early greens or extended greens to enable transit vehicles to minimize the time spent stopping at traffic signals. They would be deployed on the BRT alignments, primarily on the arterial and major streets.

VEHICLES

The Circulator is anticipated to use smaller vehicles, probably 30 feet or less. Several models are available today, and this range of choices is expected to continue in the future. The BRT vehicles will provide higher capacity and would range from 40 to 42 feet. They would have amenities and features to increase passenger comfort for longer trips.

3. COST ESTIMATES

3.1 Methodology

The approach to estimating costs is based on unit costs and quantities. Unit cost information for the recommended capital elements was compiled from recent BRT planning, preliminary engineering, and design projects conducted by IBI Group and updated as necessary. In addition, the quantities of each type of improvement, e.g., number of vehicles and stations, number of queue jumps, length of transit lanes, etc., was compiled from the recommendations. This information was used in developing a spreadsheet to calculate the costs. These estimates are conceptual and for planning purposes only. They are be subject to refinement as individual projects are implemented.

3.2 Capital Cost Estimates

The estimated costs of the improvements are summarized below and detailed in Table 1 with the quantities and unit costs.

Stations/Stops	$4,240,000
Priority Treatments	$7,547,000
Total Infrastructure, including Design, Construction Management, Utilities & Contingencies	$19,153,875
Vehicles	$6,988,750
Total	$26,142,625

3.3 How the Estimates Can Be Used

These estimates, while conceptual in nature, can be used in several ways.

- They can provide cost information for the city to use in discussions with developers for the provision of transit mitigations for their projects.
- They can provide data to SANDAG for the cost of programming future transit improvements in the Regional Transportation Plan and the Regional Transportation Improvement Program.
- They can be used by the Metropolitan Transit System and Chula Vista Transit to assist in budgeting and project programming for future services.

Table 1 Capital Cost Estimates

Item	No. of Units	Unit Cost	Cost
INFRASTRUCTURE IMPROVEMENTS			
Stations			
Small	20	$25,000	$500,000
Medium	13	$75,000	$975,000
Large	4	$220,000	$880,000
TVMs (2 per large and medium station)	34	$50,000	$1,700,000
Next Bus Display	37	$5,000	$185,000
Subtotal Stations			$4,240,000
Priority Treatments			
Queue Jump Lanes (intersection, one direction)	15	$250,000	$3,750,000
Transit Lanes (feet)	9,240	$300	$2,772,000
Traffic Signal Priority Treatments Intersections	65	$15,000	$975,000
Traffic Signal Priority Treatments Systems	Lump Sum	$50,000	$50,000
Subtotal Priority Treatments			$7,547,000
Subtotal Construction			$11,787,000
Design 15%			$1,768,050
Construction Management 10%			$1,178,700
Utility Relocations 15%			$1,768,050
Subtotal w/Design, CM & Utilities			$14,733,750
Contingency 30%			$4,420,125
Total Design & Construction			$19,153,875
VEHICLES			
Circulator	6	$225,000	$1,350,000
Rapid/Bus Rapid Transit	11	$475,000	$5,225,000
Contingency 5%			$328,750
Vehicle Branding Treatments	17	$5,000	$85,000
Total Vehicles			$6,988,750
GRAND TOTAL			$26,142,625

Notes and Assumptions:
Stations - Amenities vary by type of station.
Vehicles - 30-foot buses for circulators, 40-42 foot buses for Rapid/BRT service.
Service Frequency - 15 minutes for Circulator service and 30 minutes for Rapid/BRT service.